IN THE CLAIMS

Please amend the claims as follows:

1. (original) A single-electron transistor comprising:

a substrate including a pyramid that projects from a face thereof, the pyramid including a plurality of sides and an vertex;

a first electrode on a first side of the pyramid and including a first electrode end that extends adjacent the Vertex;

a second electrode on a second side of the pyramid and including a second electrode end that extends adjacent the vertex and that is spaced apart from the first electrode end; and

at least one nanoparticle on the vertex.

2. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 wherein the pyramid projects outwardly away from the face of the substrate.

3. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 wherein the pyramid comprises a pyramidal-shaped trench that projects inwardly from the face of the substrate into the substrate.

4. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 wherein the first electrode end and the second electrode end are spaced apart by less than about 20 nm adjacent the vertex.

5. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 wherein the first electrode end and the second electrode end are spaced apart by about 10 nm adjacent the vertex.

6. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 wherein the vertex is a point.

7. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 wherein the vertex is a plateau.

8. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 wherein the pyramid includes four sides and wherein the first and second sides are opposite one another on the pyramid.

9. (currently amended) The ~~A~~ single,electron transistor of ~~according to~~ Claim 1 wherein the first and second electrodes are free of nanoparticles thereon.

10. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 wherein the at least one nanoparticle comprises a plurality of nanoparticles on the vertex, on the first electrode end and on the second electrode end.

11. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 in combination with:

a second pyramid that projects from the face of the substrate, the second pyramid including a plurality of sides and an vertex;

a third electrode on a first side of the second pyramid and including a third electrode end that extends adjacent the vertex of the second pyramid;

a fourth electrode on a second side of the second pyramid and including a fourth electrode end that extends adjacent the vertex of the second pyramid and that is spaced apart from the third electrode end; and

at least one nanoparticle on the vertex of the second pyramid.

12. (currently amended) The ~~A~~ single electron transistor of ~~according to~~ Claim 11 wherein the third electrode is adjacent the second electrode.

13. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 11 wherein the third electrode and the second electrode are electrically connected to one another.

14. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 in combination with:

a second pyramid that projects from the face of the substrate, the second pyramid including a plurality of sides and an vertex, the second electrode extending on a first side of the second pyramid and including a second electrode end-that extends adjacent the vertex of the second pyramid;

a third electrode on a second side of the second pyramid and including a second electrode end that extends adjacent the vertex of the second pyramid and that is spaced apart from the second electrode end; and

at least one nanoparticle on the vertex of the second pyramid.

15. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 further comprising~~:~~ a self-assembled monolayer on the vertex, wherein the at least one nanoparticle is on the self-assembled monolayer, opposite the vertex.

16. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 further comprising~~:~~ a self-assembled monolayer on the vertex, on the first electrode end and on the second electrode end, wherein the at least one nanoparticle is on the self-assembled monolayer, opposite the vertex, the first electrode end and the second electrode end.

17. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 further comprising~~:~~ an anchoring layer on the vertex, wherein the at least one nanoparticle is on the anchoring layer opposite the vertex.

18. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 further comprising~~:~~ an analyte-specific binding agent on a surface of the at least one nanoparticle to provide a chemically gated single-electron transistor.

19. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 1 further comprising~~:~~ a gate electrode on the at least one nanoparticle to provide a single-electron field effect transistor.

20. (original) A single-electron transistor comprising:

a substrate including a projecting feature that projects from a face thereof;

a first electrode on the substrate face that extends onto the projecting feature;

a second electrode on the substrate face that extends onto the projecting feature and that is spaced apart from the first electrode; and

at least one nanoparticle on the projecting feature between the first and second electrodes.

21. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 20 wherein the projecting feature projects outwardly away from the face of the substrate.

22. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 20 wherein the projecting feature comprises a trench that projects inwardly from the face of the substrate into the substrate.

23. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 20 wherein the first electrode and the second electrode are spaced apart on the projecting feature by less than about 20 nm.

24. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 20 wherein the first electrode and the second electrode are spaced apart on the projecting feature by about 10 nm.

25. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 20 timber comprising~~:~~ a self-assembled monolayer on the projecting feature between the spaced apart first and second electrodes, wherein the at least one nanoparticle is on the self-assembled monolayer, opposite the projecting feature.

26. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 20 further comprising~~:~~ a self-assembled monolayer on the projecting feature between the spaced apart first and second electrodes, on the first electrode and on the second electrode, wherein the at least one nanoparticle is on the self-assembled monolayer, opposite the projecting feature between the spaced apart first and second electrodes, the first electrode and the second electrode.

27. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 20 further comprising~~:~~ an anchoring layer on the projecting feature between the spaced apart first and second electrodes, wherein the at least one nanoparticle is on the anchoring layer opposite the projecting feature between the spaced apart first and second electrodes.

28. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 20 further comprising~~:~~ an analyte-specific binding agent on a surface of the at least one nanoparticle to provide a chemically gated single-electron transistor.

29. (currently amended) The ~~A~~ single-electron transistor of ~~according to~~ Claim 20 further comprising~~:~~ a gate electrode on the at least one nanoparticle to provide a single-electron field effect transistor.

Please cancel Claims 30-56.